identify significant potential determinants. **RESULTS:** The decision of vaccination for influenza virus H1N1 was associated with factors related to education, income, interaction between education and income, gender, trust to Public Health Organizations and perceptions about the health effects of influenza virus H1N1. Individuals of higher education and income, do not intend to get vaccinated. This also holds for individuals who express low degree of trust to or believe that the H1N1 virus is not a serious threat to human health. **CONCLUSIONS:** We identified several socioeconomic and demographic factors affecting individual intent to get vaccinated for H1N1. Personal beliefs about the health effects of H1N1 virus and trust to Public Health Organizations were also significant predictors of vaccination intent.

PIN74

PARENTS' DILEMMA WHETHER OR NOT TO VACCINATE THEIR CHILDREN AGAINST INFLUENZA A (H1N1)

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OBJECTIVES: In April 2009, WHO announced the emergence of Influenza a (H1N1) and a phase 6 pandemic was declared a few months later. Vaccination was identified as an effective measure in order to eliminate the pandemic and ensure public health. The aim of the present study was to investigate the factors affecting parents' decision to vaccinate their children. **METHODS:** A telephone survey was conducted in a random sample of 12,639 households stratified by geographical area using a strictly structured questionnaire designed for the purpose of the study. The survey lasted from October 2009 to January 2010. a logistic regression analysis was conducted in order to identify the factors that influence parents' decision to vaccinate their children. The Hosmer–Lemeshow criterion was used to check the model's goodness of fit. **RESULTS:** A total of 3585 households were eligible and were included in the analysis. Education, income, concern about H1N1 and trust to the CDC were statistically significant. According to the analysis the higher the levels of education (OR 0.64) and income (OR 0.80) of the parents the lower the probability to vaccinate their children. However, the interaction term between education and income showed a positive relationship between these and the dependent variable. The greater the concern about H1N1 and the trust to the CDC the higher the probability for the parents to vaccinate their children. The Hosmer–Lemeshow goodness of fit test statistic was 0.52 suggesting satisfactory fit of the model. **CONCLUSIONS:** Based on our results concerns about the H1N1 and trust on the CDC were influencing positively the decision for vaccination. The negative relationship between education and income and parents' decision for vaccination was interesting and need further investigation. Results can explain the low vaccination rates against H1N1 in Greece and can be used by policy makers to improve future vaccination campaigns.

PIN75

ESTIMATION OF PATIENTS WITH ANTIRETROVIRAL THERAPY POTENTIALLY USED FOR HIV PREVENTION (POST-EXPOSURE PROPHYLAXIS, MOTHER-TO-CHILD TRANSMISSION PROPHYLAXIS) IN GERMANY

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OBJECTIVES: Determine the number of patients who received antiretroviral therapy (ART) potentially prescribed for prevention of HIV infection in Germany in 2008. **METHODS:** A representative panel of 1,193,464 patients from different nationwide operating governmental sick funds were analyzed for 2008. Patients with a confirmed diagnosis of HIV (ICD-10: B20–24: 64,8%; R75: 0,9%; U85: 0,6%; U60–61: 14,9%; Z21: 18,8%) were included. In addition, an IMS pharmacy panel (LRx) with 26,815 patients who had received ART identified by ATC Code J05C (Tenofovir was excluded because of use in Hepatitis) in October 2008 to September 2009 were analyzed (54% of all patients with ART-prescriptions). **RESULTS:** Sick funds: 927 patients with HIV diagnosis were identified (0.08% of the panel), 548 received an ART (treatment rate 59.1%). Pharmacies: 46% of patients received an ART prescription in 4 quarters, 16.9% in 3 quarters, 12.1% in 2 quarters and 24.9% in 1 quarter. 17.5% received prescriptions only on 1 day while of these patients 12% did not have any other ART prescription at least 4 months before or after the analysis period. Patients who received prescriptions on 1 day only, were younger, more often female and received more often Lopinavir/Ritonavir compared to patients who received prescriptions on more days. When extrapolating the numbers to the German governmentally insured population and comparing the numbers from sick funds of patients with a confirmed diagnosis receiving ART with patients who received an ART from pharmacies, about 30% of patients with ART prescription could not be matched to a confirmed diagnosis. **CONCLUSIONS:** Thirty percent of patients received ART prescriptions without confirmed HIV diagnosis. Twelve percent of patients received ART prescriptions on one day only. Since these patients were younger, more often female and received agents more often used in prophylactic regimens, we assume that prescription of ART for prevention or post-exposure prophylaxis is likely in this group.

PIN76

THE USE OF ECONOMIC ANALYSIS IN VACCINE EXPERT REVIEWS

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OBJECTIVES: Since the beginning of the new millennium, prices of vaccines have been increasing significantly, reflecting decades of research and development. As they have done with pharmaceuticals, governments have begun to incorporate economic considerations into scientific reviews. Vaccines fall into the public health category, whose ethic differs historically from that in the pharmaceutical market. The purpose of this paper is to review how countries have incorporated economics into the scientific vaccine review process. **METHODS:** We contacted experts in countries which had scientific review committees according to the VENICE website, and the USA, Australia, New Zealand, and Hong Kong. We asked a series of questions regarding the structure of the review process, the role of economics, and the economic criteria used. **RESULTS:** We obtained information from ten countries which used economics in their vaccine scientific reviews. In terms of structure, reviews fell into two groups—those which incorporated economics into the scientific review (GB, FI, FR, HK, NL, NZ, US) and those which separated economic and clinical considerations (SW, AU). The criteria used in economic studies followed the pharmaceutical guidelines in all instances. **CONCLUSIONS:** Pharmaco-economics has grown up in the world of pharmaceuticals, not in the public health arena. The ethics in these two arenas differ. Certain elements—epidemiological considerations, herd immunity, long effect times—are relevant to vaccines. Using pharmacoeconomic rules for vaccines may not create a level playing field.

INFECTION – Conceptual Papers & Research on Methods

PIN77

DO WE ADEQUATELY MODEL THE BENEFIT OF ROTAVIRUS VACCINATION OVER TIME?

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OBJECTIVES: Models estimating the impact of rotavirus vaccines over time use vaccine efficacy (VE) results from clinical trials measured at different time points. The formula to calculate VE measures diarrhea events observed in the vaccinated arm divided by events in the non-vaccinated arm during certain periods. Two problems occur: 1) the control arm builds up its own natural immunity over time: VE measured by the formula is therefore the net vaccine effect (NVE) that decreases as soon as the rate of infection increases; 2) natural immunity should be considered in the vaccinated arm as well as a booster phenomenon whereas this is generally omitted. How much will the cost-effectiveness result be impacted if natural immunity in the vaccinated arm is considered by improving the NVE-value over time? **METHODS:** A markov cohort model is used to measure the cost-effectiveness of vaccinating children at 2 and 3 months against rotavirus infection in a country such as Panama as an example. The HE-model considers the health authority perspective, a life time horizon, and an annual discount rate of 3% on cost and effect. In sensitivity analysis the NVE decrease is varied over time post-vaccination from an annual linear 15% decrease to equal value post-2 doses. The outcome measure is the change in cost-effectiveness result in function of the variation in NVE-decrease. **RESULTS:** With the 15% decrease in NVE the QALY gain is 0.0124/person, the extra cost $2.46, and the ICER = $199/QALY gained. Improving the NVE to no decrease post-2 doses results in a QALY gain of 0.0132 (+6%), an extra-cost of $0.98 (–99%), and an ICER reduction to $74/QALY gained. **CONCLUSIONS:** Assuming sustained VE over time because of natural immunity in the vaccinated arm improves the economic results -especially the costs data. The gain will mainly occur post-disease peak after 2 years.

PIN78

ECONOMIC IMPACT OF INFLUENZA EPIDEMICS: MODELLING INTERACTIONS OF INFECTIONS, TREATMENT PATHWAYS AND REIMBURSEMENT

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OBJECTIVES: Infectious diseases spread through social contacts and affect people of all age groups. Traditional epidemic models consider these effects with the use of differential equations, contact networks or explicit modelling of households and workplaces. However past modelling studies did not implement structures of the health service system, like service providers (e.g. physicians) and their reimbursement. Therefore we investigate the integration of an epidemic contact model for influenza into a framework for modelling treatment pathways and reimbursement of service providers. **METHODS:** The model framework is of object-oriented and agent based type. It incorporates patients and providers as spatially distributed agents. When patients develop diseases they search for service providers and treatment through a central health market, which in general returns one of the nearest providers of requested type. Each disease is connected to the possible treatment pathways and health services that a patient with the specific disease will go through. In the study we incorporate influenza epidemics occurring at specified time intervals. These epidemics spread through contacts of the agents modelled by a small-world network. Patients get immune after recovering and therefore one epidemic cannot infect them twice. The model calculates reimbursement from consumed health provider services and drugs. **RESULTS:** Modeled epidemics show the well-known behaviour of SIR-type models. Reduced capacity of service providers provokes that many patients do not consult them due to queuing effects. The model maps the development of costs over time plausibly. Different prescription probabilities of neuraminidase inhibitors influence the course of the epidemic only marginally. **CONCLUSIONS:** The integration of epidemic models with models of health service processes and reimbursement can lead toward